

Mr. James M. Britt  
Refractory Materials, Inc.  
267 West Valley Avenue, Suite 222  
Birmingham, AL 35209

Re: Exempt Construction and Operation Status,  
**E 089-12152-00455**

Dear Mr. Britt:

The application from Refractory Materials, Inc., received on April 7, 2000, has been reviewed. Based on the data submitted and the provisions in Sections 1 and 2 of 326 IAC 2-1.1, it has been determined that the following BOP filter cake briquetting operation, to be located at the US Steel - Gary Works Plant, One North Broadway, Gary, Indiana is classified as exempt from air pollution permit requirements:

One (1) BOP filter cake briquetting operation consisting of pre-blending, mechanical mixing using an enclosed muller mixer, briquetting, and curing.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 6-3, the particulate matter (PM) from the briquetting operation shall comply with 326 IAC 6-3-2(c) using the following equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour and  
P = process weight rate in tons per hour

2. Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), the visible emissions shall meet the following:
  - (a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
  - (b) Opacity shall not exceed sixty (60%) opacity for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

This new source is considered one source with US Steel - Gary Works. US Steel - Gary Works submitted their Part 70 application (T-089-7663-00175) on (December 12, 1996). The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

Any change or modification which may increase the potential PM emissions to five (5) tons per year or more, the potential SO<sub>2</sub>, NO<sub>x</sub>, and VOC emissions to ten (10) tons per year or more, or the CO emission to twenty-five (25) tons per year or more from the equipment covered in this exemption must be approved by the Office of Air Management (OAM) before such change may occur.

Sincerely,

Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Management

RM

cc: File - Lake County  
Lake County Health Department  
Air Compliance - Rick Massoels  
Compliance Data Section - Karen Nowak  
Administrative and Development - Janet Mobley  
Technical Support and Modeling - Michele Boner  
Northwest Regional Office  
Part 70 Application File - T 089-7663-00175  
US Steel - Gary Works

# Indiana Department of Environmental Management Office of Air Management

## Technical Support Document (TSD) for an Exemption

### Source Background and Description

**Source Name:** Refractory Materials, Inc.  
**Source Location:** One North Broadway, Gary, Indiana  
**County:** Lake  
**SIC Code:** 3312  
**Exemption No.:** E089-12152-00455  
**Permit Reviewer:** Rachel Meredith

The Office of Air Management (OAM) has reviewed an application for an exemption to install and operate a BOF filter cake briquetting operation at the US Steel - Gary Works plant. The facility description for the briquetting operation is as follows:

One (1) BOP filter cake briquetting operation consisting of pre-blending, mechanical mixing using an enclosed muller mixer, briquetting, and curing.

### History

On April 7, 2000, an application for the construction of a BOF filter cake briquetting operation at the US Steel - Gary Works plant was received from Refractory Materials, Inc. An application for a Part 70 permit (T 089-7663-00175) for US Steel - Gary Works was received on December 12, 1996, and is currently being reviewed by IDEM, OAM.

### Enforcement Issue

There are no enforcement actions pending.

### Source Definition

This operation consists of a source with on-site contractor:

- (a) US Steel - Gary Works, the primary operation, is located at One North Broadway, Gary, Indiana; and
- (b) Refractory Materials, Inc., the supporting operation, will be located at One North Broadway, Gary, Indiana.

IDEM has determined that US Steel - Gary Works and Refractory Materials, Inc. are under the common control of US Steel - Gary Works. These two plants are considered one source due to contractual control. Therefore, the term "source" in the Part 70 documents refers to both US Steel - Gary Works and Refractory Materials, Inc. as one source.

### Recommendation

The staff recommends to the Commissioner that the Exemption be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application

and additional information submitted by the applicant.

An administratively complete application for the purposes of this review was received on April 7, 2000. Additional information was received on April 19, 2000.

### County Attainment Status

The source is located in Lake County.

Pollutant	Status
PM-10	Nonattainment
SO <sub>2</sub>	Nonattainment
Ozone	Severe Nonattainment
CO	Nonattainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to the ozone standards. Lake County has been designated as severe nonattainment for ozone.

### Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

Pollutant	Potential Emissions (tons/year)
PM	3.504
PM-10	1.752
SO <sub>2</sub>	0.0
VOC	0.0
CO	0.0
NO <sub>x</sub>	0.0

Note: For the purpose of determining Title V applicability for particulates, PM-10, not PM, is the regulated pollutant in consideration.

HAP's	Potential Emissions (tons/year)
Total HAPs	0.0

See Appendix A for detailed emissions calculations. (1 page)

### Justification

The BOP filter cake briquetting operation is exempt from permitting requirements pursuant to 326 IAC 2-1.1-3(d)(1). 326 IAC 2-1.1-3(d)(1) provides an exemption for modifications to existing

sources if the potential to emit less from the modification is below the thresholds established in 2-1.1-3(d)(1).

### Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	Greater than 100
PM-10	Greater than 100
SO <sub>2</sub>	Greater than 100
VOC	Greater than 100
CO	Greater than 100
NOx	Greater than 100

- (1) This existing source is a major stationary source because it is one of the 28 listed source categories and one or more regulated pollutants are emitted at a rate of 100 tons per year or more.
- (2) These emissions are based upon the Annual Air Emission Inventory and Emission Statement for 1998.

### Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS), 40 CFR 60, applicable to the new strip dryers.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 63, applicable to the new strip dryers.

### State Rule Applicability

#### 326 IAC 2-2 (Prevention of Significant Deterioration)

This source is one of the twenty eight (28) listed sources under 326 IAC 2-2-1(p)(1), however, the potential to emit from the BOP filter cake briquetting operation is below the threshold established in 326 IAC 2-2-1(w). Therefore, the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21 will not apply.

#### 326 IAC 2-3 (Emission Offset)

The 'de minimis' rule does not apply because emissions from this project do not exceed 15 pounds VOC per day or 25 pounds NOx per day or actual emissions of 25 tons per year of VOC or NOx (326 IAC 2-1.1-3(g)(2)(D) and (E); therefore, the emission offset requirements in 326 IAC 2-3 do not apply.

#### 326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), the visible emissions shall meet the following:

- (a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty (60%) opacity for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-3 (Particulate Emission Limitations)

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the briquetting operation shall comply with 326 IAC 6-3-2(c) using the following equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour and  
P = process weight rate in tons per hour

**Air Toxic Emissions**

Indiana presently requests applicants to provide information on emissions of the 187 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Part 70 Application Form GSD-08.

- (a) This source will emit levels of air toxics less than those that constitute major source applicability according to Section 112 of the 1990 Clean Air Act Amendments.

**Conclusion**

The construction of the BOP filter cake briquetting operation shall be subject to the conditions of the attached proposed **Exemption No. 089-12152-00455**.



## APPENDIX A

### Pre-Blending:

EF PM = .02 lb/ton (from Fire 6.22 - 03-05-011-08)

EF PM10 = .01 lb/ton (from Fire 6.22 - 03-05-011-08)

PM - 20 tons/hr \* .02 lb/ton \* 8760 hrs/yr \* 1/2000 lb/ton = 1.752

PM10 - 20 tons/hr \* .01 lb/ton \* 8760 hrs/yr \* 1/2000 lb/ton = .876

### Mixing:

EF PM = .04 lb/ton (from Fire 6.22 - 03-05-011-09)

EF PM10 = .02 lb/ton (from Fire 6.22 - 03-05-011-09)

PM - 10 tons/hr \* .04 lb/ton \* 8760 hrs/yr \* 1/2000 lb/ton = 1.752

PM10 - 10 tons/hr \* .02 lb/ton \* 8760 hrs/yr \* 1/2000 lb/ton = .876

### Briquetting and Curing:

Emission are negligible - no emission factors available.